of the USIM Application; 3GPP 31.111—USIM Application Toolkit (USAT); 3GPP 31.113—USAT Interpreter Byte Codes; 3GPP 31.131—C API for the USIM Application Toolkit; 3GPP 34.131—Test Specification for the C SIM API; SCP 101.220 Integrated Circuit Cards (ICC); ETSI Numbering System for Telecommunication; Application Providers (AID); SCP 102.221 Smart Cards; UICC-Terminal Interface; Physical and Logical Characteristics; SCP 102.222 Integrated Circuit Cards (ICC); Administrative Commands for Telecommunications Applications; SCP 102.230 Smart Cards; UICC-Terminal interface; Physical, Electrical and Logical Test Specifications; SCP 102.223—Smart Cards; Card Application Toolkit (CAT); SCP 102.224 Security mechanisms for the Card Application Toolkit: Functional requirements; SCO 102.225—Secured packet structure for UICC applications; SCP 102.226—Remote APDU Structure for UICC based Applications; SCP 102.240—UICC Application Programming Interface, and all related text, which is hereby incorporated by reference.

[0120] While the SIMs are useful for expanding the functionality of the mobile devices, conventional SIMs are useful for converting the mobile device into a transaction device useful in completing transactions. The present invention solves this problem by providing a RF module configured to communicate with a mobile device microprocessor using connectors contained on the mobile device. For example, RF module may be configured to fit within a SIM slot and mate with a mobile device, SIM connectors.

[0121] **FIG. 18** depicts an exemplary alternate embodiment of RF module **20** including electrical connectors **1802** configured to communicate with, and be compatible with, conventional SIM connectors on a mobile device, such as, cell phone **300**. RF module **20** of **FIG. 18** may have similar description as module **300**. However, in this instance RF module **20** includes electrical connectors **1802** which may be in communication with the module protocol/sequence controller **208**. The connectors **1802** may additionally place the RF module protocol/sequence controller **208** in communication with the mobile device microprocessor (e.g., cell phone microprocessor **1702**), for transmitting information thereto. Notably, the module **20** may be manufactured and provided to the end user using any of the methods described herein, for example, by using the methods described in **FIGS. 8 and 10**.

[0122] **FIG. 19** depicts the module **20** including connectors **1802** placed in physical and logical communication with the electrical connectors **1902** of a mobile device, such as, cell phone **300**. As shown, the electrical connectors **1802** are placed in contact with the connectors **1902** so that information may be communicated between the RF module **20** and the microprocessor **1702**. As described more fully below, the cell phone **300** in communication with RF module **20** may be converted into a RF transaction device for completing a RF transaction.

[0123] **FIG. 20** illustrates an exemplary transaction processing method using the RF module placed in physical and logical communication with a mobile device microprocessor as described above. **FIG. 20** is best understood with reference to **FIG. 1**, **FIG. 6**, and **FIG. 21** described below. As illustrated, the transaction device **102** is a mobile device, such as for example, mobile phone **300**, that is configured to process a transaction using a RF module **20** in physical and logical communication with the microprocessor **1702** of the mobile device **300**. The RF module **20** is provided to the end user using any of the methods described herein. In one example, the RF module **20** is provided integral to the mobile device housing and in physical and logical communication with the microprocessor **1702**. In this way, the RF module **20** may be included in the mobile device when the device is manufactured. In a separate example, the RF module **20** is provided to the end user independently of the mobile device. The RF module **20** is placed in communication with the mobile device microprocessor using electrical connectors.

[0124] With brief reference to **FIGS. 6 and 21**, the functional components of an exemplary RFID reader **104** is described. As shown, RFID reader **104** may include an antenna **2104** for providing an interrogation signal from RFID reader **104** to the RF module **20** antenna **204**. RFID reader **104** antenna may be in communication with a reader transponder **2114**. In one exemplary embodiment, transponder **2114** may be a 13.56 MHz transponder compliant with the ISO/IEC 14443 standard, and antenna **2104** may be of the 13 MHz variety. The transponder **2114** may be in communication with a modulator/demodulator **2106** configured to receive the signal from transponder **2114** and configured to modulate the signal into a format readable by any later connected circuitry. Further, modulator/demodulator **2106** may be configured to format (e.g., demodulate) a signal received from the later connected circuitry in a format compatible with transponder **2114** for transmitting to RF module **20** via antenna **2104**. For example, where transponder **2114** is of the 13.56 MHz variety, modulator/demodulator **2106** may be ISO/IEC 14443-2 compliant.

[0125] Modulator/demodulator **2106** may be coupled to a protocol/sequence controller **2108** for facilitating control of the authentication of the signal provided by RF module **20**, and for facilitating the formatting of the data received from RF module **20** in a format compatible with, for example, a merchant POS **110**. In this regard, protocol/sequence controller **2108** may be any suitable digital or logic driven circuitry capable of facilitating determination of the sequence of operation for the RFID reader **104** inner-circuitry. For example, protocol/sequence controller **2108** may be configured to determine whether the signal provided by the RF module **20** is authenticated, and thereby providing to the RF module **20** account number to the merchant POS **110**.

[0126] Protocol/sequence controller **2108** may be further in communication with authentication circuitry **2110** for facilitating authentication of the signal provided by RF module **20**. Authentication circuitry **2110** may be further in communication with a non-volatile secure memory database **2112**. Secure memory database **212** may be of similar description as database **212** described above. Authentication circuitry **2110** may authenticate the signal provided by RF module **20** by association of the signal to authentication keys stored on database **2112**. Encryption circuitry **2116** may use keys stored on database **2112** to perform encryption and/or decryption of signals sent to or from the RF module **20**.

[0127] Returning now to **FIG. 20**, a typical transaction in accordance with this invention is described. The transaction may begin when an end user presents the transaction device (e.g., **300**) including a RF module **20** for transaction pro-